WILDLIFE MANAGEMENT AND RESEARCH NOTES

No.	Author	Date
583	L.C. Bender, Deer Research	3/22/93
	Title: Delury Deer Population Estimator	

I developed a DeLury catch-per-unit-effort (CPUE) model as another means of estimating the size of Indiana's deer herd. This model is a non-linear least squares regression (Marquardt method) predictor. To drive the model, total deer hunting efforts are used as the EFFORT variable, and total annual deer harvest is the CATCH variable. The DeLury model then uses the regression equation to estimate the size of the overall population from which the CATCH was taken, based on the EFFORT values given.

The DeLury CPUE estimates turned out to be gratifyingly close to the Pop-II population estimates:

	Deer Population Estimate	
YEAR	DeLURY	Pop-II
1987	249,283	272,434
1988	289,851	298,537
1989	324,804	322,901
1990	341,485	331,224
1991	330,421	329,624
1992	321,280	307,839

The 1992 DeLury estimate is really a WAG, because effort for the 1992 deer season is unknown. I assumed that total effort dropped ~1% for the model; if it did not decrease or increased, the 1992 Delury estimate is biased high. Conversely, if total effort dropped substantially, the 1992 DeLury estimate is negatively biased.